REMARKS/ARGUMENTS

This Amendment is in response to the Office Action mailed on April 21, 2005 ("Office Action"). Claims 15-52 were rejected in view of U.S. Patent 5,994,662 ("Murugesh") either alone or in combination with other references cited by the Examiner. Applicant respectfully traverses this rejection.

Independent claims 15, 36, 44, 47 and 48 have been rejected under 37 U.S.C. 102(b) as being anticipated by Murugesh. Independent claim 15 is directed at a resistive heater for heating a semiconductor processing chamber including a doped ceramic heating element and an undoped ceramic material encasing at least a portion of the heating element to form a monolithic plate. Independent claim 36 is directed at an undoped ceramic material covering a doped ceramic heating element to form a heating surface shaped to receive a semiconductor wafer. Independent claim 44 is directed at a doped ceramic heating element forming a trace having a plurality of adjacent segments, and an undoped ceramic material between the adjacent segments and forming a continuous surface for heating a semiconductor wafer. Independent claim 47 is directed at a susceptor comprising an undoped ceramic material shaped to receive a semiconductor substrate, and a doped ceramic heating element at least partially embedded within the susceptor. Independent claim 48 is directed at an undoped ceramic material between a first doped ceramic heating element and a second doped ceramic heating element that forms a continuous surface for heating a semiconductor wafer.

In rejecting independent claims 15, 36, 44, 47 and 48, the Examiner makes specific reference to column 1, lines 5-10 and column 14, lines 40-67 of Murugesh and argues that the support member 232 (described at column 14, lines 40-67) is a doped ceramic heating element embedded in an undoped monolithic plate of ceramic 232. Column 14, lines 40-67 of Murugesh describes an electrostatic chuck (column 14, line 40) with a support body 232. The support body 232 is not "a doped ceramic heating element embedded in an undoped monolithic plate of ceramic" as argued by the Examiner.

In one embodiment, the support body 232 is an electrically conducting material with a smooth layer of dielectric material 236 covering an upper surface 238 of support body 232. See col. 14, lines 41-46, 66-67; col. 15, lines 1-4. A voltage is applied to the substrate support assembly 230 by a DC voltage source to generate an electrostatic attraction force to hold the wafer W in close proximity to the upper surface of support body 232. Column 14, lines 61-65. The voltage is not applied to the support body 232 to create a resistive heating element. In fact, the electrostatic chuck may be used in some embodiments to cool a wafer rather than to heat it. See, e.g., column 14, lines 41-46 ("support body 232 . . . preferably fabricated . . . to facilitate absorption of heat from a wafer cooled over its upper surface"); col. 1, lines 8-9 (referring to "a dual cooling zone electrostatic chuck"). While embodiments of the substrate support assembly 230 may have elements that are heated (see, e.g., column 14, lines 22-33 describing a conducting material disposed on a collar or cover to elevate the temperature to increase cleaning rates), Murugesh does not disclose "a doped ceramic heating element embedded in an undoped monolithic plate of ceramic" as argued by the Examiner.

Column 14, lines 40-67 of Murugesh cited by the Examiner also makes reference to an embodiment of an electrostatic chuck that comprises a monolithic plate of ceramic. See column 14, lines 54-55. In this configuration, a conducting element is embedded in the plate so a voltage can be applied between the wafer and the conducting element to generate an electrostatic attraction force to hold the wafer in place. See column 14, lines 54-59. The conducting element may comprise a metallic element, green printed metallization, a mesh screen or the like. See column 14, lines 57-59. Neither the monolithic plate of ceramic nor the conducting element is "a doped ceramic heating element embedded in an undoped monolithic plate of ceramic" – rather they are elements used to generate an electrostatic force to hold a wafer in place as part of an electrostatic chuck.

Accordingly, Murugesh does not teach or disclose a doped ceramic heating element and undoped ceramic material in the claimed combinations set forth in independent claims 15, 36, 44, 47 and 48. In view of this deficiency, it is believed that Murugesh does not anticipate or render obvious

independent claims 15, 36, 44, 47 and 48. Claims 15-35, 37-43, 45-46 and 48-52 depend from these independent claims and, therefore, are also believed to be patentable.

CONCLUSION

Applicants submit that the instant application is in condition for allowance. Should the Examiner have any questions, the Examiner is requested to contact the undersigned attorney.

The Commissioner is authorized to charge any additional fees which may be required, including petition fees and extension of time fees, to Deposit Account No. 23-2415 (Docket No. 14912.832).

Respectfully submitted,

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